THE BIOLOGIST

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CONTENTS

Directory

Some Retrospective Reflections and Future Considerations by *C. I. Reed.*

Chapter Installations

Honorary Award

Chapter Letters

Report of the National Treasurer

Some Recent Contributions to Science

Alumni Notes

Archæological Trips, Summer, 1922, *Dr. E. B. Renaud*

THE BIOLOGIST

THE OFFICIAL ORGAN OF THE PHI SIGMA HONORARY BIOLOGICAL SOCIETY

Vol. 4 Denver, Colorado, December, 1922 No. 2.

Directory

THE CENTRAL GOVERNING BODY

National President
Dr. Emory W. Sink, Box 208, Ann Arbor, Michigan

National Vice-President
Dr. Jay L. Lush, Agr. Experiment Station, College Station, Texas

National Secretary
Prof. C. I. Reed University of Kansas, Lawrence, Kansas

National Treasurer
Erwine Hall Stewart Mesa, Colorado.

Publication

THE BIOLOGIST

Editor
Erwine Hall Stewart Mesa, Colorado.

Active Chapters

ALPHA

Ohio State University ....Columbus, Ohio
Secretary W. W. Weis ....323 West 7th Ave., Columbus, Ohio

BETA

University of Michigan ....Ann Arbor, Michigan.
Secretary, L. E. Wehmeyer..............815 Arch St., Ann Arbor, Michigan.

DELTA

University of Maine ....Orono, Maine
Secretary Prof. M. A. Crysler ....Orono, Maine.

EPSILON

University of Denver ....Denver, Colorado.
Secretary, Owen P. Cutler....2122 South Clayton St., Denver, Colorado.

ZETA

University of Wisconsin..........Madison, Wisconsin.
Secretary, R. B. Streets....Horticultural Bldg., U. of Wis., Madison, Wis.

ETA

University of Akron..........Akron, Ohio
Secretary, Ada Bordner..........532 Carroll St., Akron, Ohio.

THETA

Michigan Agricultural College..........East Lansing, Michigan.
Secretary, W. L. Mallman, Dept. of Bac. M.A.C., East Lansing, Michigan.

IOTA

Washington University..........St. Louis, Missouri.
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Secretary, Hervey Faris, Dept. of Anatomy, U. of Kan., Lawrence, Kansas.

LAMBDA

University of Montana..........Missoula, Montana
Secretary, Dorothy J. Phelps....232 South 5th St., E. Missoula, Montana.

MU

University of California..........Berkeley, California
Secretary, Clifford T. Dodds, 201 Agr. Hall, U. of Cal., Berkeley, Calif.

NU

Washington and Jefferson College..........Washington, Pa.
Secretary, Wm. Lloyd Hughes, Delta Tau Delta House, Washington, Pa.

Some Retrospective Reflections and Future Considerations

By C. I. Reed

Finding myself again active in the affairs of Phi Sigma I am moved to examine in retrospect the changes that have taken place since I first became a member. In Vol. 1, No. 1, May, 1916, The Biologist carries this statement: "Early in the school year of 1914-15, at the Ohio State University, two separate groups of students in biological departments, realizing the advantages to be derived from more extended intercourse with students in others of the fundamental biologic sciences, began independent agitation for the purpose of forming an honorary society to which students specializing in biological work might be admitted. Upon discovering the common purpose toward which each was striving, these two groups subsequently succeeded in uniting their forces and after considerable discussion and several informal meetings, eleven students, representing departments of biological science met on the evening of March 17th, 1915, in the Ohio Union and officially organized the Phi Sigma Honorary Biological Society. Another charter member was subsequently added to this number.

"Mr. Eric Cogan, graduate student in entomology was unanimously elected president of the organization. Official sanction was soon granted by the University faculty and from the beginning, the society enjoyed the hearty support and co-operation of many of the faculty members in biological departments.

"It was by the advice of these same faculty members that the decision was finally made to keep all actual control of the organization in the hands of the students themselves in order that there might be the added stimulus of responsibility for its progress. Progress has been rapid and new members have been added from time to time.

"Realizing from the first that the benefits to be derived from such an organization could be enlarged proportionately by uniting the efforts of this with similar organizations in other schools, the society has taken active steps toward nationalization and with this end in view, it was decided that the best means of proving its sincerity of purpose would be the publication of a magazine.

"The Alpha Chapter of Phi Sigma, therefore, presents for the consideration of its readers this initial effort in the literary field. Being well aware of the shortcomings of the product we do not apologize for anything that may seem inadequate, but we do express the earnest and sincere hope that this represents the poorest product of the hopes and aims of the Society and that in future there will be marked progress as we live and learn.

"One of the most prominent features in the make-up of this organization is the purpose to stimulate and aid members to greater productiveness and not merely to accord recognition for past accomplishments, which last is the predominant feature of many other honorary societies. In order to accomplish the full realization of the ideals of the organization, every member should be an active and productive worker in some line of biological science. It is not sufficient merely to fulfil the scholarship requirement specified in the constitution and to accept the honor key. Those manifestations should be incidental to the real purpose of the society."

A short time previous to the publication of this number the secretary of Alpha chapter had issued a brief statement of the aims and purposes of the society and had sent it to the heads of the biological departments in a large number of institutions. In anticipation of the flood of replies later received it was decided that it would be a better policy to have an organization of national officers separate and distinct from the Alpha chapter organization.

Accordingly an election was held which resulted in the selection of C. I. Reed, President; A. R. Shadle, Vice-President; R. L. Mundhenk, Secretary-Treasurer. The president was also designated as editor of The Biologist, then existing only in the minds and wishes of the original group. Max Wershow and A. E. Waller were chosen associate editors. This was perhaps a rather pretentious preparation but entirely justified by subsequent events.

After some preliminary correspondence, a petition was presented by the Natural Science Club of the University of Michigan. This organization had existed since the school year of 1910-11. And it is interesting to note that our present National President, Dr. E. W. Sink was a member of the original group of four members that made up the Club. Two years later the name of past President Harold Cummins appears on the list of members.

Apparently the possibility of extending the activities of the Club beyond the University had not been considered. But its existence and work were known to many members of Alpha so that there was an early unanimous vote in favor of accepting this group as Beta chapter. The petition carried the names of sixteen members, several of whom had already published research work. The vote was taken on May 10th, 1916.

Don B. Whelan, A, at that time an instructor in entomology at Michigan Agricultural College was delegated as official representative of the national body to install the new chapter on June 3rd, 1916.

About this time the Ohio National Guard was mobilized and sent to the Mexican border. Captain Mundhenk remained there on duty during most of his term of office. The vacancy thus created was never filled, the president merely taking over the additional duties of secretary and treasurer.

Just after the vote on Beta chapter and before the installation, the first issue of The Biologist appeared. It carried a number of brief original articles, some faculty endorsements, individual news, etc.

Another result of the letters sent out by Alpha chapter was the formation of a group at North Dakota Agricultural College. This group, consisting of ten members petitioned for admission as a chapter of Phi Sigma and Gamma chapter was admitted. But because of the near approach of the close of the school year the installation was deferred until the opening of school the following year. But in The Biologist, Vol. 1, No. 2, December, 1916, page 11, we find the following statement: "They were then certain that there would be a sufficient number of their members return to school this year to insure continuity, but an unfortunate train of events reduced the number returning to four and consequently the outlook was not encouraging. For this reason Gamma chapter has not been installed for it has seemed advisable to wait until it is determined whether these four men can revive the spirit and interest sufficiently to make the chapter a successful one."

This situation was unchanged when America entered the World War. When the regeneration period came on Mr. Stewart wrote to Mr. Sidney Hooper, secretary of the original petitioning group and at that time in extension work at North Dakota, with a view to learning the possibilities of reviving interest and completing the work so long delayed. For some reason Mr. Hooper chose to deny any connection with the organization or knowledge of its existence.

In the fall of 1916, Mr. P. B. Wiltberger, a charter member of Alpha was employed in the department of entomology in the University of Maine. Another alumnus of Alpha, W. C. Lane, now deceased, had filled this position the preceding year and had succeeded in arousing enough of interest in Phi Sigma that it was not difficult for Mr. Wiltberger to perfect an organization which petitioned for a charter early in the year and was installed as Delta chapter on Jan. 27th, 1917, Wiltberger acting for the national body.

Unfortunately for this chapter the war came on very soon and in the issue of The Biologist for May, 1917, the Delta letter announced that every male member of Delta was in the hospital corps and every woman in the Red Cross. An enviable record indeed but it left the chapter with no ground work for the future except three faculty members so that this chapter did not resume activities after the war as did the others. Instead, a local organization known as Sigma Sigma Sigma took its place to some extent. This society has now reached a degree of attainment which indicates that it will soon be possible to restore Delta chapter by admitting the entire group to membership under the guidance and direction of Prof. M. A. Crysler who has kept alive the spirit of Phi Sigma. It is to be hoped that we can announce very soon that such action has taken place.

In December of 1916 a petition was received from a local organization in the University of Denver known as Pi Beta Omega. This society was organized in 1912, consisting of Prof. Ira M. Cutler and three assistants. The next year it was chartered under the State of Colorado and an effort was made toward nationalization. Doubtless much of the interest aroused by this group through its correspondence had a great deal to do with the widespread interest in Phi Sigma at a later date. On March 5th, 1917, this group was installed as Epsilon chapter of Phi Sigma, Prof. Cutler acting as installing officer. Our present national treasurer was acquired by this addition for Mr. Stewart had been a member of Pi Beta Omega from the time of its organization.

Through the activities of J. I. Hambleton, A, at the University of Wisconsin a group of students in that institution organized and operated during the latter part of the year as the Lapham Biological Society. A petition was presented in due season and on May 30th, 1917, Mr. Hambleton conducted the installation exercises for Zeta chapter.

During all this time The Biologist had been appearing at intervals until a total of five numbers had been published, the last in June, 1917, which owing to a printer's error was designated as Vol. 2, No. 5, the only issue of Vol. 2. It continued to carry news of alumni, of chapter activities, brief reports of scientific activities, and other items of interest. However it began to be apparent at that early stage that it would not be feasible to try to conduct it as a magazine for reporting original papers.

At the close of the first year as a national body Phi Sigma, already on the road to the realization of some of the dreams of its originators, found itself facing the Great Crisis. Many of the most active members were already in service and others likely to be at any time. It was apparent, therefore, that a change of administration was necessary.

As a result of the election, Mr. Harold Cummins, B, was chosen Grand President. He was later employed as instructor in anatomy in Vanderbilt University Medical School. Mr. E. H. Stewart, E, was elected Secretary-Treasurer. Both these men had been early members of the original local organizations which produced their respective chapters, both had won a fair share of college honors, both had made a very creditable showing in productive work. So that with a reasonable chance the administration of Phi Sigma bade fair to be all that could be asked.

But before the properties of his office could be transferred to him, Mr. Stewart entered military service which later took him to England and of which only he can write. Mr. Cummins then asked the retiring president to continue in office as secretary-treasurer, which he did until called into service himself a year later. And during that year the outlook was indeed discouraging and became increasingly so as more and more members were drawn into service. Membership and interest dwindled to almost nothing. Very few were interested in research at all.

But during the following year of 1918-19, the difficulties were even more pronounced. The real mettle of Phi Sigma was tried severely. And for the fact that the society came through this period at all we are indebted to Mr. Cummins and his successor, Dr. Sink, and later, to Mr. Stewart, who after his return from England again entered the service of Phi Sigma as national treasurer.

A full statement of the extent of this indebtedness would be difficult to put on paper. But the general spirit of unrest, uncertainty and dissatisfaction called for an endless amount of personal contact and encouragement, and a supreme display of tact and self-control. And so they hung onto the wreck, pounded together the pieces and reconstructed a society even better and stronger than existed before.

The writer lost touch with most of the developments of the reconstruction period, having been removed from contact with an active chapter and getting information only by correspondence with the active workers.

Before the first administration closed it became apparent that the constitution was not best suited to the needs. Accordingly Beta chapter was designated as a committee to revise this and the ritual. This work was not, however, accomplished until in 1919. A number of significant changes were made that have greatly facilitated the administration of the national organization.

By the close of the school year of 1920-21, five new chapters had been added to the roll, a splendid tribute to the activity and interest of the Central Governing Body. Theta chapter, Michigan Agricultural College was installed by the National Secretary, John E. Ludwick on April 9, 1921. Eta and Iota followed in quick succession, Kappa and Lambda closing up the activities of the year.

The term of this administration having expired, an election was held in the spring of 1921, resulting in the return to their respective offices of Dr. Sink and Mr. Stewart, while Dr. J. L. Lush, Z, and the writer were elected to their respective present offices.

Further expansion activities resulted in the addition of Mu and Nu chapters. And every few days inquiries reach us about the possibility of installing chapters in other schools. Many of these inquiries are obviously not prompted by a spirit that can add anything to Phi Sigma's welfare. Many of them come from groups which desire the establishment of a biological fraternity. Of course, these cannot be considered seriously for this is an honorary and research society and no group in which the research spirit is not paramount can hope to succeed as a chapter of Phi Sigma, which is *not* a fraternity in the ordinary connotation.

In an effort to know just what degree of progress is being made *within,* and to bring before the chapters some points that have perhaps not been well emphasized, a questionnaire was sent out to each chapter at the close of the last school year. The replies have been compiled and tabulated and a discussion of these should throw considerable light on our present status. The discussion is based, not on personal opinion alone, but is based on the expressed opinions of the officers of the Central Governing Body, all of whom have had a chance to study and comment on the results. It should be understood then that the discussion and criticism is presented for the guidance of the chapters as coming from all the national officers and not from the secretary alone.

The first question concerned the total membership (all grades). This would mean alumni, honorary, active, associate and faculty members. But lack of familiarity with the Constitution is revealed by the fact that several chapter secretaries reported only active membership. Fortunately the Secretary was able to supply these figures in most cases. However, in spite of repeated admonitions some are inexcusably dilatory about reporting initiates and filing the membership records with the national secretary. For this reason many chapter records are not complete. As nearly as it was possible to determine the total membership of each chapter is as follows: Alpha 72;Beta 166; Delta 22; Epsilon 36; Zeta 91; Eta 15; Theta 25; Iota 32; Kappa 65; Lambda 24; Mu 57; Nu 25; Total 630. This approximate but nearly correct. It is suggested that each chapter secretary check over and correct any errors that are apparent. Also, in future, see to it that each new member's record is filed, for membership cannot be officially attested otherwise.

Now, with a total membership of that size it is at once apparent that a far too large percentage of our members are frightfully lacking in interest and support. It is therefore to be concluded that elections to membership have been often hasty and ill advised and that the chapters have been lax in instilling proper spirit into new members, letting them drift instead of moulding them. It is apparent that Phi Sigma as a national body has reached a stage of progress where she can afford to be more strict in elections to membership. Obviously we will profit by better quality and less quantity.

Chapter	Active fall 1921	Initiated during year	Estimated active fall 1922
Alpha	8	19	25
Beta	35	19	35
Epsilon*	......	......	......
Zeta	24	17	23
Eta	8	7	11
Theta	3	12	8
Iota	6	19	20
Kappa	18	18	12
Lambda	5	8	7
Mu	33	19	37
Total	140	138	153

*No report from chapter.

This table gives a fair basis of estimate as to the approximate rate of increase we may expect. It also gives a means of estimating available revenue in advance. It is to be regretted that some chapters did not feel disposed to turn in a report at all.

Chapter	Frequency of meeting	Programs by active members
Alpha	Bi-monthly	6
Beta	Monthly	0
Epsilon	*——	—
Zeta	Bi-weekly	Two out of three
Eta	Tri-weekly	5
Theta	Every month and a half	0
Iota	Monthly	4
Kappa	Bi-weekly	7
Lambda	Monthly	0
Mu	Monthly	3
Nu	—	—

It was a source of great surprise to the members of the Central Governing Body when the report was circulated among them, as well as a source of regret, to discover that there are three chapters depending entirely upon other than their own active membership for their programs. One of the primary purposes of Phi Sigma is to furnish an opportunity and an impetus for individual and personal development of the members. While perhaps desirable to have an occasional outside speaker for the sake of guidance and encouragement, it certainly is not in accord with the aims of this society to rest upon faculty effort entirely. To do so betokens a decline in interest and state of torpor which can only mean the ultimate decadence of that chapter.

However, on the other hand, it is a matter of gratification that other chapters are tending in the opposite direction. The National officers wish to urge upon each chapter a policy of having only one or two outside speakers a year and of furnishing their own programs at all other times.

While most of the chapters meet at least monthly, several are meeting more frequently and are to be commended therein. But it is doubtful if a longer interval between meetings is conducive of continued interest.

An estimate of the number of active members doing research work in each chapter resulted in the following figures together with percentages of active membership so engaged.

Chapter	Active membership	Engaged in research	Percentage of active Memshp.
Alpha	27	6	22+
Beta	54	20	37+
Epsilon	......	......	......
Zeta	41	41	100
Eta	15	2	13+
Theta	17	17	100
Iota	25	10	40
Kappa	36	19	53—
Lambda	13	0	0
Mu	52	24	46+
Nu	......	......	......
Total	280	139	50—

Calling attention again to the fact that one of the primary aims of this society is the furtherance of research, it is apparent that a showing of slightly under 50% of the active membership so engaged is not a source of pride. And when we take into account that most of the chapters are doing even less than that it can only mean that, either the chapter is not doing what it should to stimulate its members to undertake research, or, that many members have been included who are not well qualified to undertake it even with the stimulation. It is to be expected that there will be some who are not doing anything in this direction at a given time yet who are worthy members. We can have no fault to find with these. Where a person is elected to membership and then later goes into a professional school and drops research work, it should not be expected that such person should drop active membership. Nevertheless, it is the impression of the national officers that the percentage of those who are inactive in the field of research is far too great in many cases. Can't we have a 100% membership in the One Hundred Percent Club!

A classification of membership by departments is interesting in that it reveals a tendency to overlook the departmental specialization. It is, however, perhaps not so very important as it is obvious that there has been considerable carelessness on the part of the chapter secretaries in making the classification. In future it should be borne in mind that it is not so important to give the professional specialization as the departmental.

The classification of the total membership is as follows: Agriculture 3; agr. chemistry 2; agronomy 4; anatomy 7; animal husbandry 1; bacteriology 34; biochemistry 6; botany 27; dairying 1; dentistry 3; entomology 10; farm crops 2; forestry 6; genetics 5; geology 1; home economics 2; horticulture 1; medicine 57; pharmacy

2; physiology 7; plant pathology 12; premedic 4; psychology 3; soils 2; zoology 58.

These figures are presented just as given by the chapters. There are some minor discrepancies but in the main they are fairly reliable.

This report gives us a chance to examine ourselves as a national body and to pass judgment upon our progress. I am happy over the progress that has been made in the past but that does not prevent in the least the recognition of the size of the task ahead of us. This analysis should constitute a partial foundation on which to base future progress for it shows rather clearly the lines we must follow if we are to justify the existence of this society as an honor society. Those chapters which have assumed a purely fraternal function to be the goal are due for a rude awakening if they hope to maintain standing in the national group.

Our primary function is not fraternal, neither is it the conferring of honor. Both of these are incidental. It is to be regretted also that some chapters resort to the election of honorary members to pack a large membership roll. There are a few men of biological standing in this country on whom we can afford to waste time. We have a few honorary members who constitute more of an honor to us than we to them. Such are desirable because they are always interested and active in the small affairs of their coming successors. But we have far too many others who do not constitute an honor to us nor we to them for they are not in the least interested in our efforts to advance knowledge.

The prospect of attracting other large and desirable groups to seek membership as new chapters depends on what we can demonstrate of actual accomplishment. Prospective petitioning groups want to know what we are doing and what we are going to ask them to do as well as what we can give them.

And lastly the recognition of Phi Sigma among other scientific bodies also depends on the showing we are able to make in just such analysis as this. And we hereby warn all chapter secretaries that we will expect an even more complete compilation of information at the close of this year.

Except for the fact that Prof. Reed has not given himself credit for the effort and time that he has devoted in the service of Phi Sigma I feel that he has written a very fair and accurate sketch of our history up to the present time, in so far as things have come under my observation. ERWINE HALL STEWART

INSTALLATIONS

A Brief History of Mu Chapter of the University of California

Previous to the war there had existed on the campus of the University of California a biological society known as Beta Kappa Alpha. After the war for various reasons it seemed impossible for this organization to get on its feet again. In a University of the size of California certain students felt that there was a real need for a society which would bring about a friendly feeling among the students in the Biological sciences. In the spring of 1921 several students in the department of Zoology, both graduates and undergraduates, set about to organize a society which would offer the students an opportunity to become better acquainted with one another, and serve as a stimulus to the undergraduates to continue their work in the various fields of research as well as keeping up a high standard of scholarship. With these aims and ideals in view a constitution was drafted with the aid of the constitution of Beta Kappa Alpha and later by that of Phi Sigma.

Numerous informal meetings were held during the semester with the last in May, when the various necessary committees were appointed. During the summer the Constitution Committee drew up a tentative constitution embracing the ideals of the students. With the opening of the University in the fall this tentative constitution was presented at the first regular meeting in September, 1921, when the society was formally organized as THE CALIFORNIA BIOLOGICAL SOCIETY OF THE UNIVERSITY OF CALIFORNIA. There were 23 charter members belonging to this organization, representing the departments of Botany, Entomology, Anatomy and Zoology.

From its very beginning the society thrived and its members felt that it was fulfilling the purpose for which it had been organized. The monthly meetings proved interesting and on several occasions we were fortunate enough to be addressed by leading men of American science.

From the first we hoped that some day we might be found to be worthy to be affiliated with PHI SIGMA, an organization which we believed stood for the same principles and ideals that we had in mind. By the time our petition went to the Central Governing Body our membership had increased to 38 in number.

On the evening of April 27, 1922, the California Biological Society was installed as Mu Chapter of PHI SIGMA.

Dr. J. P. Bennett of the faculty of this University and a member of Zeta Chapter acted in behalf of the Central Governing Body and took charge of the ceremony of installation. After completing the ritual and presenting the Chapter with its Charter, Dr. Bennett read the following letter from Dr. Sink:

Letters were also read from Jay L. Lush and Erwine Hall Stewart.

After the induction was completed the following officers were elected:

President—John F. Kessel
Vice-President—Margaret D. Thomson
Secretary-Treasurer—Clifford T. Dodds

Following the election 19 new members were initiated representing the departments of Bacteriology, Biochemistry, Botany, Entomology, Genetics, Medicine and Zoology.

In conclusion I would like to say in behalf of Mu Chapter, that it gives us great pleasure to become affiliated with Phi Sigma. It is our earnest hope and desire to become one of the strongest chapters of this organization and to fulfil the trust that has been placed in us.

CLIFFORD T. DODDS,
Secretary-Treasurer.

COPY OF DR. SINK'S LETTER——

To the California Chapter of Phi Sigma:—

Greetings:—

Since the wide stretch of our continent prevents me from addressing you personally, I send you these few words at this time to encourage and foster the New Chapter at California.

It is needless for me to state how happy and pleased our society is to add you to our list. Your well recognized University and your well equipped Biological department, have made a lasting impression on us, and we know that Mu Chapter, the flower of the California Biological Society, will not only prove worthy of our recognition, but will soon rank among the leaders of our Society, Phi Sigma.

Phi Sigma, both scientific and honorary in scope, offers much to the younger student in research. It tends to create and foster a fraternal spirit among its members. Its ideals are of the first magnitude and we hope all of you individually will do as much as you can, to perpetuate the aims and purposes of Phi Sigma.

I know you have a lengthy program, but I shall herewith add a few thoughts along the line of research. Perhaps your chairman will find time to read it to you—

"OUR SPECIALIZATION"

We must realize today that a higher education is necessary in order to compete with the "rush and tread" of our national problems. More than ever before, we believe that a practical education is the basis for further training. Men today are not content to carry in their pocket, a copy of Cæsar's Commentaries, which Captain Miles Standish once relished so much. Neither are we satisfied to have simply the ability to read and translate the foreign languages. Instead we use them as a means to an end, in comparing the contained thoughts with our viewpoints.

Biology in the broad sense is a "broad" science. It is more than simply watching a snail crawl up and down the sides of a jar. We must not only be taught to have keen powers of observation but we must be able to apply our knowledge along lines of applied sciences.

Not so long ago life history of insects, bacteria and parasites in general, was subject for research, merely because it was interesting and fascinating. Today, we know that in many cases, the solution of life history has found remarkable application in the treatment of human disease, and after all, from a broad evolutionary sense, we live not to satisfy our own desires alone, but to so live, study and observe, that posterity may be better able to live and meet the environmental conditions.

So then, in our society, Phi Sigma, attempts to make it easier for the young students in Biology to have a broader viewpoint of science. We believe in mutual exchange of ideas; we believe in letting the other fellow maintain his point until proven otherwise. We believe in getting away from the narrow view of selfish research and personal contentment. We strive to see each other's views and to broaden our own views by friendly discussions and interchange of ideas. We strive to learn what the other sciences are accomplishing and to set forth our results for the benefit of society in general.

To do otherwise, would be selfish and show narrow-mindedness. Let Phi Sigma, now the leading Honorary Society, stand not merely for Honor alone, but for the purpose of producing and setting forth worthy results in Biological research.

In closing—the National President again expresses regret in not being able to attend the installation, and also again sends the best of greetings and wishes to the latest, youngest but not least Chapter in Phi Sigma.

Fraternally,
EMORY W. SINK.

The California Chapter of Phi Sigma

The National President of Phi Sigma has suggested that the members of the Central Governing Body introduce themselves to you on this, the occasion of your formal installation as a chapter of Phi Sigma. For myself I am glad to do this because the national character through frequent communication with the members of its Central Governing Body. It is for this rather than out of a desire to preach at a helpless audience that I have written the following statement of what I hold to be the aims of Phi Sigma.

The "Raison d'etre" of Phi Sigma

The average freshman in college quickly recovers from his surprise at the large number of social fraternities and sororities which exist in his college and which demand a share of his thoughts even though he is not a member of any, but there is no such quick recovery in store for him when he surveys the field of professional societies and honorary fraternities. At first he is not aware even of the existence of more than a few but as he nears the end of his senior year and especially when he enters upon graduate work he begins to be appalled at the number of these which not only exist but present plausible reasons demanding his attention, and, if he be elected to membership, his support. They exist for such varied purposes as fostering a respect for high scholarship, promoting the spirit of research, facilitating acquaintance and exchange of knowledge between those in similar lines of research, regulating the standards and terms of the profession, and establishing economic standards to a degree not far different from that of the labor unions. More than a mere suspicion that there is wasted effort and duplication among these societies and that some of them are little more than mutual admiration societies or continue to exist only because of their momentum, will arise in the mind of the student and it is a fair question on his part as to what are the real aims of Phi Sigma and just what excuse does Phi Sigma have for its existing and expanding.

The honorary aspect of Phi Sigma is not the least important of its functions and, if rightly used, it can be a powerful influence for raising the academic standards of the students in biology. By the words, "if rightly used", I mean chiefly that it should not become merely a mutual admiration society with its eyes on the past achievements of its members being elected, but that each member should feel that he himself is a representative of the society standing for high scholarship and interest in things biological and as such a representative he is being watched by the students who follow him and associate with him.

The service that Phi Sigma can render by stimulating interest in biological sciences is, in my opinion, one of its most important.

When we realize that every year thousands of college graduates are going out into the world without even a general course in both zoology and botany, as witness the curricula of our engineering colleges, and that these men and women standing in the eyes of the general public as representatives of a college education are dependent upon careless pseudo-science of the newspaper reporter or magazine hack-writer for their knowledge of all the world of living things around them, we know that the battle for more science in education and for an education which teaches how to live as well as how to make a living is not yet completely won. Many men on our faculties can remember well the time when science was first being granted college recognition, when it was academic heresy to believe that chemistry was as important a study as trigonometry, or that zoology would contribute as much culture to the mind as would an accurate knowledge of Greek. More or less directly out of these conflicts of those days grew such societies as Sigma Xi and Phi Kappa Phi. Happily it is no longer necessary for all the sciences to stand united in order to demand recognition in the educational scheme or for them to creep into the colleges through the side door offered by medicine, but there is yet a broad field for work in making the general importance of biological subjects more widely appreciated in all our colleges. It is here that the chapters of Phi Sigma can serve greatly in their program meetings by the range of subjects which they may discuss in the course of a year and the publicity which may be given to those subjects in the campus newspapers.

Last, and least discussed only because its effects are more readily seen, is the end of creating closer comradeship and greater good feeling among those who are studying biological problems. The years of graduate study tend to be narrowing upon the student's outlook since he turns so intensively to one field, and the meetings in which some other member tells of his scientific problem will be a great corrective to prevent one's getting an exaggerated idea of his own problems' importance. Such a meeting with the attendant discussion will furnish almost ideal training for the student who expects some time in the future to present scientific papers before some state or national meeting of scientists.

It is my sincere belief that so long as Phi Sigma can help to maintain or raise academic standards in biological subjects, to popularize biology and increase the appreciation of the importance of biological subjects to the cultural education, to promote good fellowship and the exchange of ideas among those especially interested in biology, and to give valuable training to those who will be the leaders of biology a generation from now, Phi Sigma can claim and deserves to receive our heartiest support. I hope and expect great things from the California chapter, situated as it is, with its background of scientific traditions.

JAY L. LUSH,
National Vice-President

Nu Chapter of the Phi Sigma Honorary Biological Society was installed in the Biological Lecture Room of Washington and Jefferson College, Washington, Pa., on the evening of May 11th, 1922. Dr. William M. Barrows of Alpha Chapter acted on behalf of the Central Governing Body and conducted the installation ceremonies. All the charter members were present except Dr. Grier who was unavoidably absent owing to serious illness in his family. After the installation a banquet was served at the Delta Tau Delta House. This banquet was complimentary and was arranged by the undergraduate members of Nu Chapter.

Installation address of Dr. William M. Barrows, May 11th, 1922.

Charter members of the Nu Chapter of the Phi Sigma Honorary Biological Society:—

You are to be congratulated not so much on the fact that you are joining the ranks of an established society that is beginning to make itself felt in the world of biological science as because you have a desire to do a good work and an opportunity, in an institution favorably situated and in a time when your services will be accepted and appreciated.

Anyone who is working in biology today realizes that the principles of biology are becoming more widely known and more widely used by thinking men than at any time in the past. In support of this statement let me mention only three noticeable instances. H. G. Wells has recently written an outline history of the world from a biological view point. Now no matter what the defects of this book are, the underlying purpose is good and the result is bound to be valuable because it focuses the attention on the biological forces acting in our little world. Stefansen in his "The Friendly Arctic" shows how he risked his life and reputation in testing a biological proposition, namely: that there is plenty of good food for man all over the arctic sea. He proved this in spite of the fact that practically all arctic explorers and all the esquimos whom he consulted thought him crazy.

Again some members of the press have realized that scientific biology should be fed to the public instead of the usual P. T. Barnum stuff. They are now making a laudable attempt to reverse the usual rule of giving the public "what it wants" and in establishing at Washington the Science Service are attempting to give the public what is true.

Turning to the educational side of biology we note two important developments, one encouraging the other discouraging, but nevertheless inevitable. First, biology is becoming more and more frequently elected by our college students as its content is modified bringing it more into line with the everyday needs and educational needs of the student.

Secondly, the number of students assigned to each instructor is increasing so that each student is losing some of the "synthesizing energy" supplied by the teacher. This fact would be decidedly discouraging if it were not for the possibility that what appears to be a drawback may very easily be made a blessing in disguise. In some of the larger institutions as the classes increase in size the students are arranged into study groups. In these groups they discuss the same questions, from printed sets, which the instructor will ask in the class room. This gives each student a chance to go over the evidence, arrange the material in logical order, try out his own ideas, and listen to other points of view. Then when he appears before his instructor the situation is moderately well in hand. This method seems to me to have another advantage in that most animals and supposedly most students learn from and are most interested in others of their own kind. This is I believe the most important function of Phi Sigma—the discussion of subjects in which all are interested with those in whom they are interested. If this program is carried out it gives each member his place and duty and adds to the interest of the group at the same time giving the faculty members a chance to exercise a stabilizing influence by cautioning and correcting when the discussion has a tendency to wander from the facts or to become personal.

I believe that the best suggestions that I can give you are along these lines. In science everything hinges on the facts, not the so-called "facts" which have never been accurately set down and measured but the actual data which are beyond any question. An instance from my experience will illustrate the point. Recently I asked two students who were advanced enough to handle the problem to find out whether goitre is an inherited condition or not. They searched the literature carefully. One authority states that heredity plays an important part in the appearance of goitre but he cited no facts beyond one or two cases which might very well have been due to accident. After much searching of the medical literature and considerable correspondence they found two or three pedigrees but this was not enough in our opinion to prove that goitre is always inherited or always sporadic. We needed many cases so that we could say in nine cases out of ten goitre is found only in families where others have the disease or some statement of that kind. Fortunately we had at hand over a hundred pedigrees from our students in heredity who had been asked to look carefully in their families for goitre. We can now answer the question four or five times as accurately as any of the physicians who talk so glibly about goitre. Another statement commonly made is that when goitre becomes frequent in a community deaf mutism increases indicating that goitre causes deaf mutes. Again we were fortunate in having a large population of deaf mutes to study. If I do not give you the facts you will be thrown back on the published unverified statements of those who say they know but who sometimes err.

My advice to you is that you check all your statements by the facts and never make statements which go beyond them. As you know this was one of Darwin's strongest traits. If the statements of those who debate evolution so vehemently were as carefully guarded and in line with the facts as were Darwin's we would not have today in the newspapers an undignified debate led by persons to whom facts mean nothing.

My second plea to you is that you choose for your initiates only those who have an inborn desire to improve themselves in their ability to carry out the best traditions of science, namely, to gather relevant facts, to arrange these in an order that will support some theory or guiding principle, and then to test this theory if possible experimentally in such a way that a perfectly unequivocal answer is given, that is, that the theory is either wrong or is supported by the test. You will find that some persons have a natural dislike of this process. They prefer to have their knowledge served to them a la carte. They will be at best only ornamental in science and may do more hurt than good.

Again, let me urge you to depend on your own resources. Do not depend on your instructors for all your programs or stimulation. If you follow the program suggested above you may find that you will develop enough self reliance so that you will save much of their time and make your meetings so interesting that it will be easy to keep up the attendance of your faculty members and make them proud to study with you instead of adopting the unfortunately common attitude of mind which may be summed up in this wise when one instructor says to another, "sorry I can't go to the show with you tonight but I have got to talk to the Phi Sigma bunch." One of the best meetings of the year held by the Alpha chapter was a discussion led by two medical students who were working on an ambitious problem. They were fast getting results when a copy of the American Medical Association Journal appeared in which was published a successful solution of their problem. Instead of giving up they decided to go ahead with their work and find out something that the other experimenter had not found! This attitude is I believe the best that can be expected of Phi Sigma members. Persistence in the study of problems on the frontiers of science with the desire to add a little to the knowledge of the world is all that one can ask.

Honorary Award

To the Chapters of Phi Sigma:—

The Central Governing Body is submitting for consideration the following rules governing competition for an honorary prize to be awarded as stated. It is hoped that one or more from each Chapter will compete.

Please notify the Secretary as soon as possible regarding the probable number of contestants from your Chapter.

Now don't be afraid of this contest. If you have been doing research work turn it in, no matter what you think of it. Its merits will be passed upon by men of national standing in biological science, and therefore competent to judge.

If the Chapters support this move as it should be supported, it will be made an annual affair.

Proposed Plan for Offering a Prize for Research Work

The Central Governing Body offers an honorary award to any active member of any chapter of Phi Sigma who completes for publication during the current year the most important piece of research work in any of the fields of biological science hereinafter indicated, either pure or applied, or in any field representing a modification of any of these. (The work need not have been taken up with this year but may have extended back over previous years.)

1. The award shall consist of purely honorary recognition, official announcement of award to be published in Science and any other publication desired.

2. Award to be made by a committee of not less than three persons other than members of the Central Governing Body, to be selected after all credentials have been turned in to the Secretary.

3. Eligibility to be passed upon by the Central Governing Body.

4. Any active member in good standing in any Chapter of Phi Sigma who is regularly enrolled for work to the extent of ten

credit hours and whose paid service (if an instructor) to the institution with which connected does not exceed one-half.

5. Eligibility of subjects may extend to the following divisions of biological science: anatomy, biochemistry, biology, anthropology, botany, entomology, zoology, paleontology, ornithology, parasitology, bacteriology, physiology, psychology, genetics, plant pathology, agricultural biology.

6. Each contestant must submit (a) Copy of manuscript or reprint, if article has already appeared in print. (b) Statement from head of department in which done, covering following points: (1) guarantee that work was done by student; (2) enrollment in department; (3) rank; (4) completion of work during current year; (5) statement that contestant was enrolled for at least ten credit hours during each semester or academic period of current year. (In case of doubt on any of these points the Central Governing Body may declare contestant ineligible.) (c) Statement from registrar showing enrollment for at least ten credit hours during each semester or academic period of current year.

7. Contestant need not be a member of the chapter located in the institution where the work was done but must be an active member of some chapter and must give evidence of same in the form of statement from the president of the chapter, receipt for dues, and membership record must be on file with the National Secretary.

8. After the Central Governing Body has passed upon eligibility, the accepted manuscripts will be transmitted to the judging committee.

9. All members wishing to enter the contest may receive more detailed instruction upon application.

10. All formal applications must be in the hands of the National Secretary not later than May 15th, 1923, but manuscripts need not be submitted until June 10, 1923.

11. The foregoing ten rules are the same as were published last year. This year the Central Governing Body has undertaken to offer in addition a cash prize of $50.00. The L. G. Balfour Co. of Attleboro, Mass., the official jewelers of the society have most generously offered in addition a prize key, the letter "Phi" of the key to be crown set with pearls, the official jewel of Phi Sigma. This key will be of a value around $25.00

DELTA

Orono, Maine, Oct. 25, 1922.

Greeting:—

The war had a serious effect on the Department of Biology of the University of Maine, and in 1917, it became apparent that our chapter of Phi Sigma could not be maintained, owing to the lack of "biology majors" in the upper years. There were however a number of pre-medical students in the first two years, and these men early in 1918 organized a local society under the name of Sigma Sigma Sigma, or Tri Sigma as it was familiarly styled. This society continued more or less active for about four years, and served a useful purpose as a sort of makeshift. Its ideals gradually improved, as is shown by the fact that the practice of admitting members before their junior year was given up. Moreover the society adopted a By-law requiring all candidates for membership to have passed at least four hours of biology with rank of B. On the 24th of October, 1922, the society voted to accept the offer of membership in Delta Chapter of Phi Sigma, and the members were duly initiated into Delta, which was thus revived. With eight new active members and three faculty members and some more excellent material from which to elect more active members this year Delta will soon be up with the society in general.

EPSILON

Denver, Colo., Nov. 7, 1922.

Epsilon chapter of Phi Sigma is small this year but has some very good material to build on.

During the last summer the State Historical and Natural History Society of Colorado and the University of Denver again had a joint expedition in the field in the southwestern part of the State, in the months of June, July and August. Mr. J. A. Jeancon, E, was in charge of the expedition the same as he was in the season of 1921.

The Chimney Rock region where the expedition worked is one of the most important archaeological areas in the United States.

In addition to the excavations made, a survey of other parts of the southwestern part of the state was made and some important data gathered.

Dr. I. E. Cutler, E, was with the expedition for a time doing some work on the Ornithology of the region.

The report of Dr. E. B. Renaud, E, who was with the expedition will appear later. Mr. Owen P. Cutler, the secretary of Epsilon chapter accompanied the expedition as geologist and obtained many excellent specimens. His report will be an important part of the general report of the expedition.

Prof. G. B. Johnson spent the summer at the southern branch of the University of California making investigations on the effects of exercise on the heart rate and blood pressure. The results that he obtained cleared up many points that were otherwise vague and could not be checked up on at an altitude as high as Denver.

Zeta Chapter of Phi Sigma

DIRECTORY

A. L. Schrader—College Park, Md.
W. G. Stover—Botany Bldg., Ohio State U., Columbus, Ohio.
F. T. Sullivan—Main High School, Madison, Wis.
John Gray—Wayne, Nebraska.
Jay L. Lush—Agri. Exp. Station, College Station, Texas.
O. C. Bryan—Soils Dept. W. Va. Exp. Sta., Morgantown, West Virginia.
John N. Lowe—Dept. of Zool., Marquette Normal, Marquette, Michigan.
William M. Gibbs—Dept. Botany, Univ. Idaho, Moscow, Ida.
Harold W. Browning—Dept. Botany, R. I. State College, Providence, Rhode Island.
Clyde M. Woodworth—Dept. Agron., U. of Ill., Urbana, Ill.
G. M. Armstrong—Mo. Botanical Gardens, St. Louis, Mo.
J. P. Bennett—Dept. Hort., U. Cal., Berkeley, California.
Chas. N. Frey—Mellon Institute, U. Pitt., Pittsburg, Pa.
H. L. Fulmer—Saluda, S. Carolina.
Max W. Gardner—Dept. Botany, Purdue Univ. Lafayette, Ind.
Thurlow C. Nelson—Rutgers College, New Brunswick, N. J.
Wendell H. Tisdale—Office of Cereal Inves., Dept. of Agri., Washington, D. C.
Chauncey L. Vanderbie—Watertown, Wis.
Morgan T. Binney—Albert Dickenson Seed Co., Chicago, Ill.
A. E. Cole—Dept. Zool., Northwestern U., Chicago, Ill.
N. J. Giddings—W. Va. Agr. Exp. Sta., Morgantown, W. Va.
M. C. Gugler—Chapman, Kansas.
Walter C. Kraatz—Zool. Dept., Ohio State Normal, Columbus, Ohio.
H. H. Roehm—Sanitarium Milk Co., Houghton, Mich.
Wm. B. Tisdale—Tobacco Exper. Sta., Quincy, Fla.
W. H. Snell—Brown Univ., Providence, R. I.
R. A. Nesbit—Takamah, Nebraska.
M. H. Campbell—Univ. of Ill., Urbana, Ill.
Arthur C. Foster—Bur. Plant Industry, U. S. Dept. Agr., Sanford, Florida.
Eben H. Toole—Bur. Plant Industry, U. S. Dept. Agri., Washington, D. C.
Bert Cunningham—Dept. Zool., Trinity College, Durham, North Carolina.
Roy L. Abbott—Dept. Zool., Ia. State Teachers College, Cedar Rapids, Iowa.
W. W. Yapp—Dept. Animal Husbandry, Univ. of Ill., Urbana, Illinois.

Paul A. Harvey—Botany Dept., Harvard U., Cambridge, Mass.
Govan N. Stroman—Agr. Exp. Sta., College Station, Texas.
R. W. Hartwell—R. R. 7, Madison, Wisconsin.
James Godkin—Northeast P. O., Pa.
George F. Weber—Fla. Exp. Sta., Gainsville, Florida.
George F. Forster—Dept. Zool. Olivet College, Olivet, Mich.
Raymond G. Weihe—Wakefield, Mich.
R. W. Leukel—Office Cereal Inves., Dept. of Agr., Washington, D. C.
Clevenger, C B.—Fletcher, Ohio.
Joseph E. Simmons—(address unknown).
Godfrey, G. H.—Bur. Plant Industry, Dept. of Agr., Washington, D. C.
Reinking, O. C.—United Fruit Co., Tela, Honduras.

MEMBERS IN THE UNIVERSITY

Honorary Members

Jones, L. R.—Plant Path., Horticultural Building.
Gilbert, E. M.—Botany Dept., Biology Building.
Kraus, E. J.—Botany Dept., Biology Building.
Pearse, A. S.—Zoology Dept., Biology Building.

Alumni Members

Brann, J. W.—Hort. Bldg., Univ. of Wis., Madison, Wis.
Dickson, Jas. G.—Plant Path., Hort. Bldg.
Doolittle, S. P.—Plant Path., Horticultural Building.
Jones, L. K.—Plant Path., Horticultural Building.
Rickett, H. W.—Botany Dept., Biology Building.
Riker, A. J.—Plant Path., Horticultural Building.
Roberts, R. H.—Horticultural Building
Monteith, John R., Jr.—Plant Path. Horticultural Building
Walker, J. C.—Plant Path., Horticultural Building.

Active Members

Albertz, H. W.—Agronomy Building.
Anderson, John A.—Agricultural Hall.
Black, Archie—Ag. Chemical Building.
Boyden, A. A.—Dept. Zool., Biology Building.
Carver, W. A.—Ag. Chem. Building.
Chambers, E. L.—State Capitol.
Davis, Ray J.—Plant Path., Horticultural Building.
Fellows, Hurley—Plant Path., Horticultural Building.
Frazier, Wm. C.—Agricultural Hall.
Hall, F. G.—Zool. Dept., Biology Building.
Hampton, H. C.—Botany Dept., Biology Building.
Holden, E. D.—Agronomy Building (Vice-President)

Hubert, E. E.—Old Soils Building.
Jones, J. H.—Agricultural Chemical Building.
Kenyon, W. A.—Zool. Dept., Biology Building.
Nelson, N. T.—Agronomy Building.
Noland, L. E.—Zool. Dept., Biology Building (President)
Mossman, H. W.—Zool. Dept., Biology Building.
Brunkow, O. R.—Ag. Chem. Building.
Drake, F. E.—Agricultural Hall.
Fargo, J.—Agricultural Hall.
Sullivan, F. T.—Ag. Chem. Building.
Stevens, J. W.—Agricultural Hall.
Streets, R. B.—Plant Path., Hort. Building (Secretary)
Tasche, L. W.—Science Hall.
Thompson, Noel F.—Plant Path., Hort. Building.
Thompson, J. McD.—Agronomy Building.
Tiedgens, V. A.—Agronomy Building.
Tims, E. C.—Plant Path., Horticultural Building
Walker, M. N.—Plant Path., Horticultural Building.
Yoke, J. J.—Ag. Chem. Building.
Fellows, Hurley—Plant Path. Horticultural Bldg. (Treasurer).

Eta

Akron, Ohio, October 20, 1922.

Greetings:—

On May 3rd of the last semester, Eta Chapter held its Spring election. A fine group of seven new members were elected as follows: Olive Keck, Natalie Averill, Violet Crews, Ada Bordner, Carolyn Hillman, Mary Shuman and Howard Milford.

Closing the semester's activities we banqueted royally at Albertson's Hotel. Dr. Plowman, Robert Bordner and Wilbur Robart were the three speakers of the evening. The election of officers was held at this time with Wilbur Robart for President, Mary Shuman for Vice-President and Ada Bordner for Secretary-Treasurer.

This year opened with fine enthusiasm and good spirit at the first meeting October 11. Dr. Plowman sketched his research work on the Box Elder which was published some time ago.

President Robart has instituted a series of individual research lectures from the active members as programs for the meetings for the year. We are contemplating these with a good deal of interest and are in high hopes of a successful year in every way as Eta is certainly working.

The alumni of Eta are coming along fine. Roland Fox is back at Akron as an assistant instructor in the Biological Department.

Vivien Whigam, after a year in the medical school at Ann Arbor, is now in the Bacteriology department of the largest hospital in Akron.

Arno Towne and Howard Milford have left us for medical schools and Dr. Allen is teaching in a western school.

Theta

East Lansing, Mich., November 6, 1922.

Theta Chapter held its first meeting this fall on October the tenth. At this meeting the following men were voted into the fraternity.

Delbert Schwartz—Botany, Miami University.
D. Stewart—Botany, Alabama Polytechnic Institute.
D. E. Hasley—Bacteriology, B. S., M. A. C., 1922.
R. H. Weaver—Bacteriology, M. S. Allegheny College, 1922.
C. R. Magee—Farm Crops, M. S. University of Missouri.
O. R. Yoder—Soils, University of Nebraska.

The initiation banquet will be held on November 7th at which Dr. R. C. Huston, Prof. of Organic Chemistry, will give an address.

The policies as outlined for this year call for monthly meetings at which active and alumni members will present original work.

Under the guidance of President David Friday there has been a new stimulus toward a greater graduate school which is shown by the fact that the number of graduate students has trebled this year. President Friday believes in a graduate school and is making every effort to make that part of the institution a success.

Below is a list of the papers either published or awaiting publication by the active members of Theta also a list of active members and of the alumni members who are continuing their graduate work in other institutions.

ACTIVE MEMBERS THIS FALL.

E. L. Grover—Botany.
B. Proulx—Farm Crops.
F. W. Fabian—Bacteriology.
W. L. Mallman—Bacteriology.
S. R. Johnson—Parasitology.
R. L. Tweed—Bacteriology.
W. C. Bennett—Botany.
R. Nelson—Botany (U. of M.)
C. F. Jolly—Parasitology.
I. H. Sippy—Soils.

Work completed during the past year by active members of Theta Chapter:

J. E. Kotila—Potato Disease Investigations, Sp. Bulletin No. 110.

Leo Klotz—Late blight of celery caused by *Cereospora apii.* This will be published as a technical bulletin this year.

W. D. Mills—Sunflower rust caused by *Puccinia healinthi.* Presented at the Michigan Academy of Science.

W. C. Bennett—Phoma root rot of celery, technical bulletin No. 53.

R. L. Tweed—Bacteriological studies of flat sours in cold packed canned peas. This will be published as a technical bulletin this year.

The relation of high cellular counts in milk to *Bacterium abortus* infected udders. This will be published later as a technical bulletin.

O. H. Friedemann—Study of *Bacterium abortus* infected udders. Presented as thesis for M. S. degree. This will be published later as a technical bulletin.

F. W. Fabian and Ray Cromley—Influence of manufacturing operations on the bacterial content of ice cream. To be published as a technical bulletin.

The following members are continuing their graduate work at other institutions:

William Clench—Dept. of entomology, University of Michigan.

Lionel S. Tisdale—Dept. of Botany, Washington University, St. Louis, Mo.

J. L. L. Frank—Dept. of Entomology, Cornell University.

H. B. Smith—Dept. of Botany, University of Michigan.

O. H. Friedemann—Dept. of Bacteriology, University of Chicago.

S. T. Flynn—College of Medicine, University of Michigan.

W. D. Mills—Dept. of Botany, Cornell University.

Ray Nelson—Dept. of Botany, University of Michigan.

Iota

St. Louis, Mo., Nov. 8, 1922.

On October 27th Iota chapter held its first regular meeting of this school year, at which time ten new active and six faculty members were elected. In an effort to become more active in carrying out the aims of Phi Sigma, several plans for the ensuing year were discussed. Of these, probably the most interesting and the most effective is that concerning the fund which we hope to establish in this chapter. Several times during the last year the question was raised as to what should be done with the gifts which we received from faculty and alumni members. This question was settled at our last meeting by a decision to place all of these gifts into a fund with which we will, every summer in the future, pay the tuition for one of our members who will go to Woods Hole. This is only one of the means whereby we hope to "advance the biological interests, and to create and foster a fraternal spirit among our members," to quote the constitution.

As to the scientific investigation which has been carried on by our active members I may mention the following dissertations which have been submitted to the Board of Graduate Studies of Washington University in partial requirement for the M. S. degree. Those which have not already been published will appear this year in the Washington University Studies.

"Observations on the distribution of Mitachondria in the Cells of Hydra.—Wilmoth Green (submitted May, 1922.)

"The effects of certain iron salts upon the growth of wheat in water culture."—Mildred Johnson (submitted May, 1922.)

"An histological study of regenerative phenomena in plants."—Cora Mautz (submitted May, 1922.)

"Perophora Viridis" (Verrill). (1) Activities and reactions of the free-swimming larva. (2) Organization and histological structure of the larva.—Gladys McCosh (submitted May, 1922.)

"Botryllus Schosseri" (Pallas). The behavior and the morphology of the free-swimming tadpole larva.—Helen Woodbridge (submitted May, 1922.)

"A study of facial hair in the white and negro races."—Mildred Trotter (Washington Univ. Studies Vol. 20.)

In addition the following articles have been published in the past year or will appear in the near future:

"A study of ringed hair."—Lee D. Cady and Mildred Trotter, archives of Dermatology and Syphilology.

"The resistance of hair to certain supposed growth stimulants." —Mildred Trotter, archives of Dermatology and Syphilology.

"The distribution of body hair in white subjects."—C. H. Danforth and Mildred Trotter, American Journal of Physical Anthropology.

"The incidence of hereditary facial hypertrichosis in white women."—Mildred Trotter and C. H. Danforth, American Journal of Physical Anthropology.

Lambda

Missoula, Montana, April 15, 1922

Our meetings have progressed as planned at the beginning of the year with talks by various members on the several phases of biological science.

At our last meeting we gave a banquet and had as the speaker and guest of honor, Dr. R. R. Parker who has for several years been in charge of the Tick Spotted Fever investigation in the Bitter Root Valley and vicinity.

Editor's Note—The above item was received too late for the May issue.

Mu

Berkeley, Cal., Nov. 17, 1922.

Mu chapter was installed at the University of California on April 27, 1922, by Dr. J. P. Bennett (Zeta), assistant professor of Pomology at this institution. The charter membership of the chapter consisted of 38 members of the California Biological Society, which was thenceforth discontinued as a distinct organization. Immediately following installation, the chapter initiated 19 new members, and the following officers were elected for the present academic year: President, J. F. Kessel; Vice President, Margaret D. Thomson; Secretary-Treasurer, C. T. Dodds.

The membership of Mu chapter is largely composed of graduate students, and it seemed that one of the most important functions of the organization should be to acquaint the members with the nature and progress of each others' work. With this in view, alternate meetings are given over to the presentation by some of the members of the results of their own research. At other meetings it is aimed to have speakers of some note discuss topics of general biological interest. Such meetings, are as a rule open to the public, and much interest has been aroused by them. Our program for the year is as follows:

Sept. 6th. Papers by members of the chapter.

"Effects of Poisons on Inheritance in *Drosophila*." by Dr. Margaret Mann.

"Studies of *Trypanosoma brucei*," by Mr. W. W. Reich.

"Paleontological Studies in the Great Basin," by Mr. R. J. Russell.

"Effects of Hemorrhage," by Mr. C. S. Capp.

Oct. 4th. "A Botanical Expedition to Tahiti," by Prof. W. A. Setchell, Professor of Botany, University of California.

Nov. 1st. Business meeting. Election of new members. Social hour and refreshments.

Dec. 6th. Initiation of members. Banquet.

Feb. 7th. "Flowers and Fruits of the Tertiary Period," by Dr. Chaney, of the Smithsonian Institution.

"Ecological Aspects of Ocean Life," by Dr. W. K. Fisher, Director of Hopkins Marine Station, Stanford University.

March 7th. Papers by members of the chapter.

"The Ecology of Pikes Peak," by Miss Dolly Lutjeharms.

"The Marine Borers of San Francisco Bay," by Mr. R. C. Miller.

"Some Biological Aspects of the West Coast of Mexico," by Mr. C. T. Dodds.

April 4th. Address by Dr. David Starr Jordan, Chancellor Emeritus, Stanford University.

May 9th. Papers by members of the chapter.

At the November meeting 33 new members were elected. When these are initiated, it will bring the total of active members to 75. The chapter has 14 faculty, one honorary, and 15 alumni members.

Prior to the recent state election Mu chapter took an active part in the campaign which defeated the anti-vivisection amendment to the state constitution. Had this measure passed, biological research along many lines would have been rendered illegal.

The members of this chapter feel that one of the major functions of THE BIOLOGIST should be to bind closer together the different chapters for purposes of mutual helpfulness, especially in the prosecution of research. We give below a list of papers published by our members during the past year, and also a list of research and thesis subjects. Thus if members of other chapters are working along the same lines, correspondence may be initiated to mutual advantage. Since we have no national directory of members, the secretary of Mu will be pleased to send addresses of any of its members upon solicitation, or to forward to them mail sent in his care.

Papers published by members of Mu chapter during the past year are:

Ball, Gordon H., B.S., M. A.—Variation in fresh mater mussels, Ecology, Vol. III, No. 2.

Blair, Edward, A.B., M. A.—Gesell, Blair and Trotter. On the relation of blood volume to tissue nutrition. I. The effects of hemorrhage on the circulatory and respiratory response to changes in the percentage of O_2 and CO_2 in the respired air. Amer. Jour Physiol., Vol. 61, p. 299.

Blum, Harold F., A.B.—on the effects of salinity on *Teredo navalis*. U. C. Pub. Zool. (In press).

Dodds, Clifford T., A.B., M.A.—A new mealy bug, *Eriococcus palustris* n. sp. Jour. Ent. and Zool. (In press).

A list of Coleoptera of the sea shore of Laguna Beach, California. Jour. Ent. and Zool. (In press).

Further observations on the water hyacinth, *Eichornia crassipes* Solms. Mo. Bul. Dept. Agri. Cal. Vol. XI, No. 10. The lepidopterous sugar cane borers of the Fuerte Valley, Sinaloa, Mexico. The Cal. Countryman, Vol. VIII, No. 8.

Mann, Margaret, C.A.B., M.A., Ph.D.—The stability of an inbred line of *Drosophila melangaster* under experimental conditions. (In press).

The occurrence and hereditary behavior of two new dominant mutants in *Drosophlia*. Genetics (In press).

Miller, Robert C., A.B., M.A.—The mind of the flock. Condor, Vol. 23, pp. 183-186.

The significance of the gregarious habit. Ecology, Vol. III, pp. 122-126.

Variations in *Teredo navalis* in San Francisco Bay. U. C. Pub. Zool. Vol. 22, pp. 293-328.

Rhodes, Bernice, A.B., M.A., Gay, F. P. and Rhodes, B.—Experimental Streptococcus pneumonia and empyema. Jour. Inf. Dis. Vol. 29. Gay, F. P. and Rhodes, B.—Experimental erysipelas, Streptococcus infection. Jour. Inf. Dis. Vol. 31.

Reich, William W., A.B., B. S., M. A.—Variation in size of *Trypanosoma brucei* according to host. Proc. Soc. Exp. Biol and Med. Vol. XVIII, p. 316.

Trypanosoma brucei as a filterable virus. Jour. of Parasitology. (In press).

Haldeman, Keene O., A.B.—Mode of opening of the vagina in the rat. Anatomical Record, 1920.

Davis, Nelson C., A.B., M.D.—McQuannie, I. and Davis, N. C. —Blood volume studies. Amer. Jour. Phys. 1920, pp. 257-278. Davis, N. C. and Whipple, G. H.—Influence of fasting and various diets on the liver. Injury effected by chloroform anesthesia. Arch. of Inter. Med. Vol. XXIII, pp. 612-635.

Davis, N. C. and Whipple, G. H.—Liver regeneration following chloroform injury as influenced by various diets. Arch. of Inter. Med. Vol. XXIII, pp. 711-722.

The topics under investigation by members of the society at present as follows:

Ball, Gordon H., B.S., M.S.—Induced mutation in *Paramecium*.

Dodds, Clifford T., A.B., M.A.—Life histories of parasitic Hymenoptera.

Doyle, Dorothy, A.B.—Mutation in certain anærobes. Rate of toxin production in *B. diptheriae*.

Farber, William P., A.B.—Micronucleus of *Euplotes patella.*

Fisher, Edna E., A.B., M.A.—Medical science in New Spain, from the Aztecs to the present time.

Studies on the distribution of lipoids in rat and mice embryos.

Forkner, Claude E., A.B.—The relation of monocytes to lymphocytes and macrophoges.

Gilchrist, Francis G., A.B.—Insect behavior.

Hall, Richard P., A.B.—Morphology and nuclear division of *Menoidium incuroum* (Frec.) Klebs.

Haydon, Helen B., A.B., M.A.—Taxonomic and cytological studies of the North American species of the genus *Crepis.*

Haney, Christian W.—Investigations of some new characters in *Drosophila melanogaster.*

Inskeep, Don. L., A.B.—Distribution of X and Y chromosomes in Hemiptera.

The structure of the trophic centers of post ganglionic fibers.

Kessel, John F., A.B., M.A.—A comparison of the Endamoebæ of man with those of the rat and mouse.

Lamiman, John F., B.S.—Codling moth control by dusting.

Lazier, Edgar L., A.B., M.A.—Anatomy of *Teredo navalis* Linn.

Lockard, Lois P., A.B., M.A.—Biochemical study of blood-platelets.

Lutjeharms, Dolly C., A.B., M. A.—Slope exposure differences from the standpoint of climatic and photometric factors.

Mann, Margaret C., A.B., M.A., Ph.D.—The fate of the unfertilized egg of the rat.

The stability of inbred lines of *Drosophila.*

MacKillop, Gladys, A.B., M.A.—Pathological changes due to *B. histolytiens.*

Miller, Robert C., A.B., M.A.—Natural history of marine borers.

Olsen, Myrtle E.—Circulation in the Annelid *Nephthys corca* (?) (Fab.)

Peterson, Clara E., A.B., M.A.—The effects of certain bacteria on the toxin production of *B. botulinus.*

The distribution of spore bearing anærobes in nature.

Ready, Alice M., A.B.—Gummy diseases of the apricot tree, with special reference to bacterial gummosis.

Redfield, Helen, A.B.—Infant mortality.

The effect of age upon the production of sex-linked lethals in *Drosophila.*

Reich, William W., A.B., B.S., M.A.—Coccidiosis as a possible sanitary problem in California.

Russell, Richard J., A.B.—Fauna of Santa Margarita formation, Monterey, California.

Paleontological studies of the Great Basin.

Stark, Naomi A., A.B., Agglutination of *B. sporogenes.*

Thompson, Martha L., B.S.—Embryology of the albino rat.

Thomson, Margaret D., A.B.—Specificity of Giardis in mice and kittens.

Van Slyke, Edgar, B.S.—*Euplotes patella* in H-ion culture.

Woodruff, Regina, A.B., M.A.—Some shelled Rhizopods of Kansas.

Studies of the Ophryoscolecidæ, ciliates from rumunant stomachs. On viability of typhoid bacillus.

Wymore, Floyd H., B.S.—Life history and host plants of the mealy bug, *Pseudococcus gahani* (Green).

Studies of the life history and control of the asparagus centipede, *Scutigerella californica* Woodworth.

Recommendations Concerning "The Biologist"

Berkeley, California.

To the Central Governing Body of PHI SIGMA:

In view of the fact that a recent amendment of the by-laws of PHI SIGMA Honorary Biological Society provides for an annual assessment of $2.00 on each active member of the society, said assessment to cover a subscription to the BIOLOGIST, the official publication of the society, Mu Chapter, located at the University of California, respectfully submits the following recommendations, which were passed as resolutions at our meeting of Oct. 4, 1922.

1. That The Biologist be published as a quarterly journal.

2. That the size of the page be increased to a standard journal size, e. g., 7 by 10 inches.

3. That, in lieu of "alumni notes", a directory of active and honorary members be published annually in The Biologist, such directory to include name, address and subjects of research or major interest of each member.

4. That the secretary of each chapter make a quarterly report of scientific papers recently published by members of the chapter, and when possible, secure author's abstracts of such papers for publication in The Biologist; further, that the secretary re-

port briefly such programs or addresses sponsored by the chapter as are deemed of general interest.

5. That, in view of the congestion of scientific publications at the present time, The Biologist admit to its columns reports of research and original papers of not unsuitable length, and that arrangements be made with the publishers to secure authors' reprints of the same at cost.

6. That a business manager be appointed whose function shall be to secure a limited amount of advertising, inquire into the most economical methods of publication, and otherwise take steps to establish the journal on a sound business basis.

These suggestions are in no wise intended to reflect on the previous policy of The Biologist, as it is recognized that previous issues have been published in the absence of suitable funds, and largely as a philanthropic enterprise on the part of the national officers.

Editor's Note.—We trust that other chapters will make further suggestions.

NU

Washington, Pa., Oct. 14, 1922.

Greeting:

At the spring initiation William E. Noble, Paul H. Miller, Robert S. Lucas, B. L. Kesselman, D. B. Stough and W. L. Hughes were added to the membership of the Society as active members and the following were elected to honorary membership: Dr. Edwin Linton, Emeritus Professor of Biology; Dr. O. E. Jennings, Curator of Botany at the Carnegie Museum, and Professor of Botany at the University of Pittsburgh, and editor of The Biologist; Dr. Arnold Ortmann, Curator of Invertabrates at the Carnegie Museum, and Professor at the University of Pittsburgh; Hon. Gifford Pinchot, founder and former Professor of the Yale School of Forestry; Professor Edward M. Weyer, of the Dept. of Philosophy of Washington and Jefferson College.

Dr. N. M. Grier, Professor of Biology at W. and J. College was in charge of systematic botany at the Marine Biological Laboratories at Cold Spring Harbor, Long Island, this last summer.

H. J. Bush and John S. Robb, charter members of this chapter obtained their masters' degrees last June. Paul Miller has entered the Harvard Graduate School of Business Administration.

The activities of the chapter for the year 1921-22 were concluded with a banquet and reception for the new members.

Dr. Grier has been appointed County chairman for the following societies: Wild Flower Preservation League and Pennsylvania State Conservation Society.

Phi Sigma has brought a renewed interest in Biology to W. & J. College and the enrollment in biological courses has increased over 60%, and included in this number are four graduated students.

Report of the National Treasurer

According to the constitution the Treasurer is required to make a printed report but once in two years, however as some of the chapters have asked how the money of the Society is spent I gladly submit the following report.

In The Biologist for May, 1921 there is a report covering the period from Dec. 1st, 1919, to April 20th, 1921. This report covers the period from April 20th, 1921 to June 1, 1922.

RECEIPTS

For the purchase of keys	$740.97
Charter fees	100.00
Initiation fees	132.00
Biologist subscriptions	4.18
Eta Chapter advanced on general academic assessment No. 1, not due until Oct. 31st, 1922	20.00
Total - - - - - - -	$997.00
Balance on hand	77.14
Total - - - - - -	$1074.29

EXPENDITURES

Keys	$740.97
Printing Biologist	185.41
Printing	18.25
Expressage	5.40
Cut of the Coat-of-Arms	8.00
Letterheads	9.97
Nu Chapter Installation	16.65
Lettering Charters	15.75
National Secretaries office	17.29
Postage	9.22
Total - - - - - -	-$1026.91
Balance on hand June 1, 1922	$ 47.38

Some Recent Contributions to Science

"Variation in the Flower of the Wild Carrot" Torreya, Vol. 22, No. 4, July-August, 1922, N. M. Grier, N.

"The Mosses of Washington County, Pa." The Bryologist, Vol. 25, January, 1922, N. M. Grier, N.

"The Value of the Normal School Curriculum for Advanced Standing in Colleges for the Liberal Arts Course", Pennsylvania School Journal, December, 1921, N. M. Grier, N.

"Preparing Succulent Plants for Rapid Drying" The American Botanist, Vol. 28, No. 2, May, 1922, N. M. Grier, N.

"Notes on Hemerocallis," Torreya, Vol. 21, No. 1, Jan.-Feb., 1921, N. M. Grier, N.

"Morphological Features of Certain Mussel Shells found in Lake Erie,, compared with those of the corresponding species found in the drainage of the upper Ohio," Ann. Carnegie Museum, Vol. 13, p. 145-182, N. M. Grier, N.

"The Historical Structure of the Gills of the Najades with special reference to the Histology of the Groove along the edge of the Inner Gill," The American Midland Naturalist, Vol. 8, Nos. 4, 5, Hiram J. Bush, N.

"Unreported Ferns from Montana" Bulletin of the Torrey Botanical Club, 47—81-85, April 8, 1920, Paul W. Graff, A.

"Philippine Basidiomycetes" Bulletin of the Torrey Botanical Club, 48—285-295, January 19, 1922, Paul W. Graff, A.

"Lignification of Mature Phloem in Herbaceous Types," American Journal of Botany, 9—239-244, Carl L. Wilson, E.

"Overwintering of Tomatoe Mosaic," Bot. Gaz. 73—469-485, 1922, Max W. Gardner, Z.

"Tomatoe Mosaic" Bulletin No. 261, May, 1922. Agr. Exp. Sta. Purdue University, Max W. Gardner, Z.

"Bacterial Spot of Tomatoe" Jour. Agr. Research, 21—123-156, 1921, Max W. Gardner, Z.

"Tomatoe Bacterial Spot and Seed Disinfection" Bulletin No. 251, Feb., 1921, Max W. Gardner, Z.

"Is the Box Elder a Maple?" Botanical Gazette, Sept., 1915, A. B. Plowman, H.

"The Relative Prevalence of Pycnospores and Ascospores of the Chestnut Blight Fungus during the Winter" Phytopath. 3—296-305, Pl. 26, 27 and 28, 1913, M. W. Gardner, Z.

"Longevity of Pycnospores of the Chestnut-blight Fungus in Soil," Journal Agr. Research, 2—67-75, 1914, M. W. Gardner, Z.

"Air and Wind Dissemination of Ascospores of the Chestnut-blight Fungus," Journal Agr. Research, 3—493-526, Pl. LXII, LXIV, and LXV, 1915, M. W. Gardner, Z.

"The Mode of Dissemination of Fungus and Bacterial Diseases of Plants," Mich. Acad. Sci. Rept. 20—357-423, 1918, M. W. Gardner, Z.

"Seed Treatment Control and Overwintering of Cucumber Angular Leaf-spot," Phytopath, 8—229-233, 1918, M. W. Gardner, Z.

"Anthracnose of Cucurbits," U. S. Dept. Agr. Bul. 727—1-65, Pl. I-VIII; Fig. 1-15, 1918, M. W. Gardner, Z.

Market Pathology and Market Diseases of Vegetables," Phytopath, 9—497-520, 1919, M. W. Gardner, Z.

"Handbook of the Diseases of Vegetables Occurring Under Market, Storage, and Transit Conditions," U. S. Dept. Agr., Office Cotton, Truck and Forage Crop Disease Investigations. Prelim. Edition for use of Food Products Inspectors of the Bureau of Markets, May 24, 1919, M. W. Gardner, Z.

"Soybean Mosaic," Jour. Agr. Research, 22—111-113, Pl. 18, 1921, M. W. Gardner, Z.

"Turnip Mosaic," Jour. Agr. Research, 22—123, Pl. 20, 1921, M. W. Gardner, Z.

"Insects as Disseminators of Plant Diseases, IV. Urgent Problems of the Future," Phytopath, 12—233-240, 1922, M. W. Gardner, Z.

Alumni Notes

William Jacob Holland, N, is Director of the Carnegie Museum, Pittsburgh, Pa. For further information look in "Who's Who."

Otto Emery Jennings, N, is Curator of Botany, Carnegie Museum, Pittsburgh, Pa.

John D. Long, N, is at present Medical Adviser, U. S. Veterans Bureau, Washington, D. C.

Edward N. Weyer, N, is a member of the faculty at Washington and Jefferson. For further information look in "Who's Who."

H. J. Reinhard, A, one of the original charter members of Alpha chapter is working on systematic entomology for the experiment station at College Station, Texas.

Dr. Toole, Z, who is working in the Bureau of Plant Industry of the United States Department of Agriculture recently spent two weeks at College Station, Texas, in the seed testing laboratory doing field work on the germination of the seeds of southern farm plants.

Helen Woodbridge, Ι, is now on the faculty of the University of Maine.

D. V. Atwater, Δ, is farming at Fort Fairfield, Maine.

T. E. Fairchild, Δ, is pastor of the M. E. church at Orono, Maine.

Miss E. M. Bright, Δ, is a technical assistant at Harvard Medical School.

Maurice Jacobs, Δ, is grand secretary of the Phi Epsilon Pi fraternity with headquarters at Philadelphia, Pa.

Miss Callie Larrabee, Δ, graduated from Cornell Medical School in June and is now located in a Cincinnati hospital.

Earl Merrill, Δ, since his graduation from Harvard Medical School has been connected with Yale Medical School. He was recently married.

H. A. Peterson, Δ, since his graduation from Johns Hopkins Medical School has been practicing medicine.

Miss Doris Russell, Δ, is engaged in Girls' Club work at Webster, Mass.

Donald Welch, Δ, since obtaining his doctorate at Harvard University has been connected with the Department of Plant Pathology of Cornell University.

Gladys McCosh, Ι, is instructor in the Zoology Department of Wellesley College.

ALUMNI ATTENTION !

Get busy, help your Alma Mater by helping your own chapter of Phi Sigma as well as help the Society nationally. Subscribe for the "Biologist." Do it today. Don't put it off until tomorrow. $1.00 a year to all alumni members. Send it either through your chapter secretary or direct to the National Treasurer.

BLANK FORMS

Henceforth both the chapter and national membership record blank forms will be printed in lots by the Central Governing Body and sold to the chapters at the actual cost of printing. Send orders for them to the national treasurer. So long as the present supply lasts they will be two cents each for either size and when more are printed the price will be controlled by the cost.

NATIONAL DUES

National dues become delinquent November 1st and April 1st. Every member who is initiated prior to February 1st or any active member who receives two issues of the Biologist during the year is liable for the $2.00. But those initiated after February 1st and receiving only one issue of the Biologist are liable for only $1.00 dues until the following year.

The Biologist

Copy for the next issue is due to be in the hands of the editor not later than April 5th, 1923.

What it should contain.

1. Name and address of the chapter secretary.

2. A chapter letter embodying all the chapter activities since this went to press.

3. The titles and exact references of the published articles of all members.

4. Alumni news items.

5. The last issue contained a fairly complete list of the membership of Beta Chapter. This issue contains a complete and up to date directory of Zeta Chapter and as fast as each chapter will compile a chapter directory it will be printed and in that way we will get a society directory, which otherwise it is out of the question to provide at this time.

6. The national dues that fall due April 1st should all be in by this time in order that a correct mailing list may be made out and the right number of copies printed so that no one will be missed.

7. This issue went to press on November 22, 1922.

Archaeological Trips, Summer, 1922

After giving a course on the ethnology of the Indians of the Plains and another on the archæology of the San Juan Basin, during the first term of the Summer School, I went to the camp of the Second Archæological Expedition at Chimney Rock, in Southern Colorado. I visited the excavations done at the Main Ruin on the Upper Mesa by the students of the University of Denver under the immediate supervision of Mr. F. Roberts, assistant and the few so-called Pit-Houses along the Piedra River.

On Saturday morning, August 12, F. Roberts, two students, Kirkgaard and Heiner and myself left for an archæological trip of a week. The same day we reached Aztec, N. Mex., and visited the large ruin excavated by Mr. Earl Morris. We observed the great variety of Kivas found there, the similarity of some types of wall construction with the Main Ruin of Chimney Rock Mesa, the interesting large Kiva similar to the one at Chettro Kettle, Chaco Canon, and the beautiful cribbage roofing of the reconstructed Kiva. We also enjoyed seeing the variety of pottery at the Museum as well as the figurines coming from excavations on the Navajo Reservation.

The next morning we went to Farmington and after Sunday dinner as guests of Mr. J. S. Palmer, former assistant of the First Archæological Expedition, we motored up La Plata river through a desertic country of very interesting geological formation. We passed by ruins formerly explored by Mr. Morris and then climbed Red Mesa. After recrossing La Plata river we camped at a little school house for a comfortable night in spite of a windy evening. The next morning, through rough country and along difficult paths, we located at last the new camp of Mr. Morris at Red Horse Gulch, Colorado. We arrived just in time to witness the uncovering of a burial with pottery intact. We visited some of the pit-houses with sandstone slabs as partitions and floors recently excavated. After watching the way the work was done and exchanging interesting information we left in the afternoon. On our way we looked up minor ruins on the west bank of La Plata river near its confluence with Cherry Creek. We followed up the pretty valley of the latter until dark. On account of the dampness of the ground we stopped for the night at an old Dutchman's farm where supper and breakfast were cooked.

Early morning we started out toward Mancos and the same evening arrived at Spruce Tree Camp, Mesa Verde. We were welcomed by Dr. J. W. Fewkes, Chief of the Bureau of American Ethnology. We heard him lecture that evening. The next day, August 16, was spent revisiting with the boys the main Cliff-Dwellings of the National Park and seeing for the first time the Earth Lodge excavated since my last visit four years ago. Had an important talk and exchange of information with Dr. Fewkes that evening. The next day I spent with him and his assistant, Mr. McKern at Far View House. I was shown and explained in detail the excavation work of the season while the boys finished their tour of the most important ruins and finally they were taken around by Dr. Fewkes to see the newly excavated buildings. Several new and important things have been uncovered this summer and archæological problems remain numerous.

That night we camped at Cortez, Colorado. The next morning we went for a superficial inspection of Yucca House, Aztec Springs, upon recommendation of Dr. Fewkes who suggested that it would be a ruin worthy of being excavated by the University of Denver. It is near the road to Ship Rock, back of Mesa Verde, the cliffs of which are towering over the country. The ruin consists of two large buildings, a lower and an upper house, recalling Far View House and the Pipe Shrine. Many minor ruins crowd around them. It has never been expored, although visited by Holmes as early as 1875. It looks very promising.

The afternoon of August 18 was spent mostly in the picturesque and very warm McElmo Canon running toward the Utah line. There, as everywhere we went, we visited the ruins in sight, observed wall construction, picked up potsherds for future study, took pictures and compared in our mind what we saw with what we knew of other ruins. That evening we turned back eastward and came to camp at Mancos. We reached Durango the next afternoon having completed a most interesting archælogical tour, visited a number of Indian ruins, gathered valuable information, traveled through a picturesque country and in spite of the hardships of the road and camping we felt satisfied and enriched in knowledge. The boys then made for Chimney Rock Camp which they reached that Saturday evening.

After resting over Sunday I took the train for Farmington, N. Mex. There for three days, under the guidance of Mr. J. S. Palmer, who knows well the surrounding country, I visited five archæological sites along the San Juan river. It is a region rich in mounds and ruins and renowned for its pottery. It would afford a good field for exploration with the possibility of connecting the work done by Mr. Morris both at Aztec and La Plata.

A few days of rest in Denver, the time to get my notes in shape, and I re-started southward. From Santa Fe I went to spend a couple of days at El Rito de los Frijoles. It is a beautiful and secluded canon containing hundreds of talus houses and cavate lodges, several story high, built in prehistoric times over several miles at the foot of huge sandstone cliffs. There is also the ruin of a circular Pueblo. The shards picked up there differ greatly from the typical pottery of the San Juan Basin.

On September 4, 5 and 6, took place the wonderful Santa Fe Fiesta. Monday was consecrated to the centennial anniversary of the opening of the Santa Fe Trail. There was a great pageant portraying events in the history of the Southwest from 1538 to 1922. Tuesday was De Vargas Day. I witnessed the spectacular pageant reproducing the ceremonies incident to the reconquest of New Mexico by the Spaniards in 1693 and celebrated annually since 1712. Then came Indian Day. On the afternoons and evenings of these days two historical dramas were presented with real Franciscan Padres and Indians playing their parts. Spanish and Mexican folk songs and dances alternated with 12 Indian dances. The latter especially were unique in beauty and ethnologic interest. There was also an Indian Fair where for the first time were exposed the arts and crafts of some 20 tribes or villages. Were represented pottery, basketry, blankets, jewels, paintings, leather and bead work, with weaving, silversmithing and sandpainting done before the visitors. Nothing more interesting for the artist and the ethnologist.

There for five days the southwestern section of the Association for the Advancement of Science convened at the New Museum, a building of the greatest interest both for its architecture and art galleries typical of the country. The mornings were taken up by the meetings of the various scientific sections. Several well known archæologists and ethnologists were heard and their papers brought up subjects of real scientific value. The afternoons were devoted to visits to the Museums and to neighboring ruins. I specially enjoyed going to Pecos, a large Indian Pueblo of long occupation and abandoned only in 1838. For several seasons it has been excavated by Dr. Kidder of Andover, Massachusetts.

This trip to Santa Fe completed advantageously the exploration of the preceding month and both allowed me to return to the University of Denver, September 10, with plenty of new information, pictures, shards, all of great value for my teaching. I offered for the first time this semester a course in Prehistoric Anthropology for which 70 students registered and many were refused for lack of room. Mr. F. Roberts has over 40 students in his course on the Archæology of the Southwest. This proves a true interest in those sciences.

E. B. RENAUD, E.

KAPPA

Lawrence, Kansas, November 13, 1922.

Kappa Chapter has been slow getting started this year for various reasons. First, the President, Mr. E. D. Kiefer, did not return. Also, certain minor matters interfered, such as getting a meeting place and selecting a suitable time for meeting. Now we are prepared to meet every other Monday evening.

The members are all active and enthusiastic in carrying on the work of the Society. Our policy is to have the program for each meeting to consist of reports by active members on their research problems. By such reports, given by members who have made progress in research, we hope to encourage those who are just beginning some line of biological research. Our aim is to keep the faculty discussions to a minimum in order to encourage the other members to take an active part. It was found advisable, however, to obtain faculty members to lead the discussions of the first two meetings.

Dr. W. S. Hunter, Professor of Psychology, gave an interesting and valuable lecture on "The Relation of Psychology to Biology."

Professor Johnson, of the Department of Zoology, gave an interesting report, aided by lantern slides, on "Beavers in the Adirondacks."

Professor Johnson has made a survey of the distribution of the beaver in New York, and of the destruction caused by beaver dams.

Mr. E. D. Kiefer, President of Kappa, resigned in order to enter Harvard Medical School. For the past two years Mr. Kiefer has been an instructor of Biochemistry in the Medical School here.

Mr. Ira D. Hogg, of the Department of Anatomy, was elected president, and has shown a lively interest in the Chapter's future by planning the meetings for the year and defining the policy of the chapter.

Mr. Warren Cooksey left Kansas University this fall to attend Harvard Medical School, entering the Sophomore Class.

Miss Cornelia M. Downs, Department of Bacteriology, and Mr. H. S. Faris, Department of Anatomy, attended Chicago University during the summer quarter.

Theodore S. Eliot, of the Department of Zoology, spent the summer at Friday Harbor, Puget Sound, Washington, studying in the Biological schools there. This year he is a Fellow in the Department of Zoology, University of Chicago.

Dr. Bennet M. Allen, Head of the Department of Zoology, resigned in June to accept a position at the University of California. He was Director of the Summer School at Friday Harbor, Washington.

Dr. Henry C. Tracy, Department of Anatomy, spent the summer in research work at Woods Hole, Mass.

Mr. Edward Stevenson attended the University of Iowa during the summer session.

THE appointment of the L. G. Balfour Company as sole official jewelers to Phi Sigma Society is contingent for its successful fulfillment upon the "Service" the company can render its individual members. We will therefore, be deeply grateful to have your earnest co-operation and to receive suggestions which will aid our efforts to make the term "Service" more effective. Our desire for your continued patronage is no stronger than our intention to deserve it.

Our 1922 *Blue Book and any of the collegiate fraternity badge price lists will be sent on request.*

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